

REMARKS

This RCE is being filed in result of several telephone conferences with the Examiner. It is noted that this amendment accompanying the RCE introduces the limitation that the hydrogenation step is conducted under a sufficient pressure so as to keep more than 80% of the gasoline feedstock in the liquid phase. Claim 24, moreover, requires more than 95% by weight of the gasoline feedstock to be in the liquid phase in the selective hydrogenation step. These values are supported by page 7 of the specification, middle paragraph. In contrast, the Carter et al. reference sends effluent from the hydrogenation reactor to the separator in "substantially vaporous form", column 2, last line to column 3, line 1. As such, the Carter et al. system teaches away from Applicants' invention.

During the telephone conferences, additional aspects of Applicants' invention were discussed. In particular, it was respectfully pointed out to the Examiner that in the advisory action of March 21, 2007, first paragraph on page 2 there is an incorrect comparison insofar as the change involves the total sulfur in the raffinate. From Table 3, it is seen that the total sulfur in the raffinate is 27 ppm whereas in Table 2 based on the same feedstock, the total sulfur is 119 ppm, Table 2 representing a process wherein an intermediate hydrogenation step is not conducted. This calculates to a decrease in sulfur of about 78% without significantly reducing the olefin content compared to the high sulfur raffinate obtained in Table 2 without the use of Applicants' hydrogenation step.

Also, according to Applicants' specification, the paragraph bridging pages 9 and 10, a raffinate that exhibits a very low sulfur concentration can be used directly or after an intermediate treatment that is aimed at, for example, increasing its octane rating as a gasoline base. Furthermore, on page 12, other advantages of the invention are set forth:

"This process thus exhibits numerous advantages. The effluent that is obtained at the top of column B (raffinate) exhibits a very low sulfur content (essentially non-thiophenic light sulfur-containing compounds) that is in most cases compatible with the most rigorous standards, thus permitting its direct use as a base for gasoline without an additional

desulfurization stage. In contrast, the extract consists of a large majority of aromatic hydrocarbons (60-90% by weight) with a high octane rating; its desulfurization can therefore be conducted under fairly permissive conditions without a risk of substantial reduction of said rating, which makes it possible to greatly reduce the overall facility cost."

It was also pointed out to the Examiner that in the tabulated composition of an FCC gasoline set forth in the Lee et al. reference, there is no mention of diolefins. In contrast, Applicants provide a liquid phase hydrogenation reaction, which not only results in the elimination of small quantities of diolefins, but also provides highly improved results by virtue of the significantly low quantity of sulfur in the raffinate without any significant sacrifice in olefin content.

In view of the above distinctions and further in view of the amendment filed November 30, 2006 including the attached exhibit, and further in view of the newly provided limitation requiring a liquid phase hydrogenation which flies in the face of the Carter et al. process, it is courteously submitted that the application is now in condition for allowance. If, however, there are any remaining issues which can be expeditiously resolved by a telephone conference, the Examiner is courteously invited to telephone Counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,


I. William Millen, Reg. No. 19,544
Attorney/Agent for Applicant(s)

MILLEN, WHITE, ZELANO
& BRANIGAN, P.C.
Arlington Courthouse Plaza 1, Suite 1400
2200 Clarendon Boulevard
Arlington, Virginia 22201
Telephone: (703) 243-6333
Facsimile: (703) 243-6410
Attorney Docket No.: PET-2106
Date: April 3, 2007